

REMARKS

Claims 1 and 9-11 are pending in this application. By this Amendment, claim 1 is amended, claims 2 and 5-8 are canceled and claims 9-11 are added. In particular, the features of dependent claim 2 have been incorporated into independent claim 1. Support for the new claims can be found in Applicant's Specification at paragraphs [0021], [0023] and [0030], for example. No new matter is added by these amendments.

Applicants appreciate the courtesies shown to Applicants' representatives by Examiner Ford in the September 4, 2009 personal interview. Applicants' separate record of the substance of the interview is incorporated into the following remarks.

The Office Action rejects claims 1-2 and 5-8 under 35 U.S. C. §103(a) as being unpatentable over JP 11-054593 to Todoroki in view of U.S. Patent No. 6,270,619 to Suzuki et al. (hereinafter "Todoroki"). The features of dependent claim 2 have been incorporated into independent claim 1, and thus the rejection will be addressed with regard to the rejection of dependent claim 2. The rejection is respectfully traversed.

Independent claim 1 recites, "a substrate transfer unit that automatically leaves a substrate determined to be abnormal and at least one of the substrates contacting the substrate determined to be abnormal in the substrate holder, and transfers the substrates other than the substrate determined to be abnormal and the at least one of the substrates contacting the substrate determined to be abnormal from the substrate holder without requiring a user substrate transfer according to a result of the sensing of the holding condition of the substrates using the sensing device."

The Examiner admitted during the interview that Todoroki fails to disclose a system that can locate a specific substrate determined to be abnormal.

Instead, the Examiner asserted during the interview, that Suzuki provides a system that determines the holding condition as well as the precise location of each substrate, and

thus it is suggested that using Suzuki's system in combination with Todoroki's system one of ordinary skill in the art should be able to develop a system that locates the abnormal substrate, automatically leaves the abnormal substrate, and transfers all of the remaining substrates "merely by programming the control means accordingly." Further, the Examiner asserts that once the site of the abnormal wafer is known, the transfer robot can obviously be rendered capable of removing those wafers disposed above and below the wafer identified as abnormal merely by programming the control means accordingly.

Suzuki only discloses a system that detects either whether the center of a substrate deviates from its central axis of the cassette by utilizing position sensors 112 or whether a substrate is missing or broken by utilizing non-contact sensors 130 on the hand 128. (See Col. 9, line 57 through Col. 10, line 30). During a transfer of an individual substrate, the system in Suzuki extends the hand underneath each individual substrate and then senses whether a substrate is missing or broken. (See Col. 10, lines 22-30).

As discussed during the interview, two potential problems could arise in Suzuki that the claimed substrate treatment equipment solves. First, if a substrate in an abnormal holding condition is contacting another substrate below the abnormal substrate, the system in Suzuki would attempt to remove the normal substrate since the non-contact sensors on the hand would detect a normal substrate. An attempted transfer of a normal substrate contacting an abnormal substrate by the system in Suzuki would cause damage to additional normal substrates located below the abnormal substrate since the abnormal substrate would likely drop when the normal substrate below the abnormal substrate was removed.

The second potential problem occurs when a substrate is in an abnormal holding condition, such as where the substrate has cracked or one side of the substrate has dropped. In this situation, Suzuki discloses a system that would require the hand to be inserted directly into the broken or dropped substrate when the system attempts to determine whether the

substrate is broken. An attempted transfer by the system in Suzuki would cause damage to the transfer device, the abnormal substrate and normal substrates located below the abnormal substrate.

As mentioned by the Examiner during the interview, the above-mentioned claimed limitations of claim 1 are considered disclosed or suggested by the prior art if the components of the prior art apparatus are capable of performing the claimed invention. However, as discussed above, the applied references are not capable of performing the claimed limitations. The claimed substrate treatment equipment remedies both of the identified above potential problems by having the transfer unit automatically leave a normal substrate if the normal substrate is contacting an abnormal substrate. Thus, the combination of Todoroki and Suzuki fail to disclose or suggest, and are not capable of performing, the above-mentioned claim limitations.

Accordingly, Applicants respectfully request that the rejection be withdrawn.

Dependent claim 9 is allowable over Todoroki and Suzuki because both Todoroki and Suzuki fail to disclose or suggest a substrate transfer unit that has a transfer unit body and a main tweezers body, and the sensing device is located on the transfer unit body.


Dependent claim 10 is allowable over Todoroki and Suzuki because both Todoroki and Suzuki fail to disclose or suggest a sensing device that has two parallel arms, wherein the arms can be turned on a side face of the transfer unit body.

Dependent claim 11 is allowable over Todoroki and Suzuki because both Todoroki and Suzuki fail to disclose or suggest a sensing device that has a first and a second photosensor, the first photosensor is a light emitting photosensor and the second photosensor is a light receiving photosensor.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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